

ZULKARNAIN ZAINAL**Ph.D. (University of Manchester)**

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**EXPERTISE**

Materials Chemistry, Photoelectrochemistry, Nanomaterials
Synthesis, Photocatalysis

Zulkarnain Zainal is a professor at the Department of Chemistry, Universiti Putra Malaysia since 1989. He obtained his first degree from Universiti Kebangsaan Malaysia and PhD in Chemistry from University of Manchester Institute of Science and Technology (UMIST), United Kingdom. He was promoted to Associate Professor in 1997 and Professor in 2005. He is also an associate researcher at Materials Science and Characterisation Lab in Institute of Advanced Technology and a researcher at Putra Catalysis Centre in UPM. His main research interest is in the field of material chemistry particularly semiconductor electrochemistry. In his work he deals with the preparation of electrochemical materials for energy conversion and storage, and materials for environmental sustainability. In collaboration with other researchers, he also involves in research on nanomaterials and nanotechnology. He has authored and co authored over 200 articles in citation index journals in the area of his research and received various compliments for his achievement.

CURRENT RESEARCH INTERESTS:

- Chemical and electrochemical synthesis of binary and ternary metal chalcogenides sensitised thin film materials for solar cell applications
- Synthesis and structural analysis of nanostructured metal oxide and metal chalcogenide thin films prepared by electrochemical methods.
- Development of nanophotocatalyst for environmental protection and clean energy production.
- Synthesis of multinary nano-oxide materials and composite for supercapacitor application.
- Synthesis and modification of crystalline and amorphous nanocarbon materials for electronic and environmental

LINK TO POSTGRADUATE FIELD OF STUDY:

Physical Chemistry, Materials Science, Advanced Materials, Nanoscience

ADDITIONAL INFORMATION:

www.researchgate.net ~Zulkarnain Zainal
www.scholar.google.com ~Zulkarnain Zainal